 +9

LS Phenomenon Notes

What questions do you have about this phenomenon?

At least two Questions

+2

Introduction (TCI pg 55)

You learned in the last lesson that, through photosynthesis, producers capture the sun's energy to transform carbon dioxide and water into sugars and molecules. +1

The matter and energy that is stored as sugars and other molecules in the bodies of producers is then used by the organisms that eat them as their source of matter and energy. +1

Section 1 Consumers (TCI pg 56)

+1 Organisms that cannot produce their own food using photosynthesis are consumers.

+1 A Consumer is an organism that gets matter and energy by eating or absorbing other organisms as food.

+1 All organisms use the energy stored in food as fuel to support everyday activities as well as growth and reproduction.

+1 After consuming food, consumers can use the energy they get from the sugars in the food right away, or they can store it.

+1 Matter that made up the bodies of producers is then used to form the cells and body structures of the consumers that eat them.

Do Practice TCI pg 56

Investigation 2 Performing Cellular Respiration Notes

Plants make food in the form of carbon-based sugars. What happens to those molecules when animals eat them?

How might some of this food end up being exhaled out the nose?

+11

Section 2 Sources of Matter and Energy (TCI pg 57)

Both kinds of organisms— producers and consumers use food as a source of matter and energy.
Producers and consumers get energy their cells need from sugar molecules.
Producers and consumers get matter from their surroundings, but they differ in the source of the matter they use to grow and build cells.

Consumers breathe in air and take in water, but they do not use this matter to produce sugars or build cells, as producers do.

To get matter to build their cells, consumers must eat other organisms and use the matter in those other organisms to build their cells.

Section 3 Cellular Respiration (TCI pg 58 & 59)

Both producers **and** consumers carry out a process called cellular respiration.
Cellular respiration is the process that cells use to release energy stored in sugars.
Cellular respiration takes place in structures inside cells.

Mitochondria are structures in cells that convert energy in sugar molecules into energy that the cell can use.

Cellular respiration generates energy when molecules of sugar are broken apart and react with oxygen to produce carbon dioxide and water.

The equation representing cellular respiration is:

sugar + oxygen --------> carbon dioxide + water + energy

Matter is not lost; it just changes form.

Practice Check for Understanding TCI pg 58-59

Section 4 How you get Energy and Matter (TCI pg 61-62)

Each of your cells uses the molecules it gets from food to carry out the chemical reactions that give you energy and help you grow.

Some of the molecules in food are the same sugars that are reactants in cellular respiration reactions.

Other chemical reactions combine small molecules to build different structures that make up your cell parts. Through these reactions, the matter in food is conserved as it gets transformed into the matter that makes up your body.

A **carbohydrate** is a molecule used to store energy.

Plants and other organisms combine sugars to make the complex carbohydrate cellulose.